REMARKS

A. Status of the Claims

Claims 1-6, 10-14, 16, 17, 19-22, 24, and 25 have been amended. Claims 15, 18, and 23 have been canceled without prejudice. Accordingly, claims 1-14, 16, 17, 19-22, and 24-27 are currently under consideration.

The claims amendments do not introduce any new matter, but merely clarify the language of the claims and that which Applicants regard as their invention.

B. Rejection under 35 U.S.C. §112, first paragraph - written description

The Examiner has rejected claims 13, 16, 18-23, and 25-26 as allegedly failing to comply with the written description requirement. The Examiner asserts that the specification fails to provide written description for the claimed compounds, kits and complexes having histidine-rich peptide sequences of any number of histidine.

The Examiner is required to satisfy the burden of demonstrating that the inadequate written description rejection is proper. See, *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). A strong presumption of adequacy of written description exists and § 112, paragraph 1 rejections of an original claim should be rare. See, MPEP §§ 2163(I)(A) and 2163(II)(A). It is respectfully submitted that in this case the Examiner has not met this burden.

The description is considered adequate if "the disclosure of the application relied upon reasonably conveys to the artisan that the inventor had possession ... of the ... claimed subject matter [at the time of filing]." See, *Wang Labs Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767. In other words, the question of the lack of adequate written description does not arise unless "one skilled in the art [would not be able] to immediately envisage the product claimed..." *Fujikawa v. Wattanasin*, 93 F.3d 1559, 39 USPQ2d 1895. It is submitted that applying these broad principles to the present application, it can be unequivocally concluded that the written description in this application adequately supports the claims.

More particularly, the Examiner has asserted (page 2, third full paragraph of the Office Action) that the "specification fails to provide written description" for "the histidine peptide sequence of any length." The Applicants respectfully disagree.

The specification provides that "**any** histidine-rich sequence is contemplated for use in practice of the invention" (see, paragraph [00046], page 17, lines 1-2, emphasis added). There is nothing in the specification stating or otherwise indicating that the disclosure is limited only to a target sequence having a fixed number (six) of histidine residues. To the contrary, the specification provides complex (I) (page 17), where a compound of the invention is combined with the chelating Zn^{2+} compound and bound to the targeted peptide sequence. The specification provides that the complex (I), where the target sequence has six histidine residues, but if the formula of complex (I) is closely examined, one can see the terminal fragments "∿∿NH–" and "–CO∿∿." Those having ordinary skill in the art know that the symbol "∿∿" is frequently used as a short-cut indicating a polymeric chain of **an indefinite length**. In this case, the polymeric chain clearly comprises an indefinite number of histidine residues connected with amido (i.e., peptide) bonds –NH–CO–. Therefore, upon the close review, one can see that the complex (I) does comprise a histidine sequence with any number of residues.

In addition, the specification provides that the complex (I) "is set forth for exemplary purposes only" (see, paragraph [00047], page 17), clearly rebutting the notion that only a six-histidine sequence is disclosed. Indeed, the specification teaches that the "histidine-rich peptide sequence **preferably** contains about 6 histidine residues" (see, paragraph [00048], page 17, emphasis added). Had the six-residue sequence been the only sequence contemplated by the inventors, the word "preferably" would have been superfluous. The elementary rule of construction is that a word in the specification must be interpreted in a way to give the word some reasonable meaning, rather than to deprive the word of any meaning. It is submitted that should the specification be interpreted in such a way as to hold than only the six-histidine sequence is described, the word "preferably" would become meaningless. The word "preferably" must, by definition, refer to a group, to indicate which member of group is favored by the inventor. To give the word "preferably" a reasonable meaning, the invention must be interpreted in such a way that a variety of histidine-rich sequence is within the purview of the invention, while the sequence having six histidine residues is only one of many histidine-rich sequences that can be used.

To summarize, when one having ordinary skill in the art familiarizes himself with the specification of the present invention, he will be able to immediately envisage the product claimed, as required in *Fujikawa, supra*. What one will envisage will include a compound of the invention combined with the chelating Zn^{2+} compound and bound to histidine-rich peptide sequence of **any** length, not merely a six-histidine sequence.

It is, therefore, submitted that the specification does describe any histidine-rich sequences, not just a sequence having six histidine residues. In view of the foregoing, the Applicants submit that the present specification contains a complete description of the invention sufficient to demonstrate that the Applicants, at the time the application was filed, had possession of the claimed invention. Accordingly, it is respectfully submitted that the rejection of claims 13, 16, 18-23, 25, and 26 under 35 U.S.C. § 112, first paragraph, as allegedly lacking adequate written description, does not apply. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

C. Rejection under 35 U.S.C. §112, first paragraph - enablement

The Examiner has rejected claims 13, 16, 18-23, and 25-26 as allegedly failing to comply with the enablement requirement. The Examiner asserts that the specification, while enabling for six histidine residues, does not provide enablement for any number of histidine residues.

The Examiner asserted that the specification "does not reasonably provide enablement for any length of histidine" sequence, and that the "claimed process is not believable on its face" (page 2, fourth full paragraph of the Office Action). The essence of the Examiner's position seems to be that the application pertains to the art having very low predictability, and that the guidance given by the specification is insufficient to practice the invention. Therefore, the Examiner has concluded that undue and burdensome experimentation will be required of those having ordinary skill in the art who wish to practice the invention. The Applicants respectfully disagree.

While the Examiner is correct that the art, to which the application belongs, has very low predictability, it is submitted that the quantity and quality of disclosure provided by the

specification is sufficient. The Examiner has conceded that the disclosure enables claims directed to histidine-rich peptide sequence containing six histidine residues (see, page 2, fourth full paragraph, of the Office Action). If this is so, then claims directed to other number of histidine residues in the sequence, or indeed to **any** number of such residues, must be likewise enabled. By examining the formula of complex (I) provided on page 17 of the specification, one can see that the compound of the invention bonds, via Zn^{2+} chelating, to the histidine-rich peptide sequence, using the imidazole ring of histidine.

Once the chelate bond is established, the adduct is formed. It is of no consequence how long the histidine-rich peptide sequence is. The sequence spreads outwardly (see the terminal fragments "~~NH–" and "–CO~~" in the formula of complex I), and the length of the sequence is irrelevant for the purposes of bonding. Whether the histidine peptide sequence is short, long, or of intermediate length, is irrelevant. All that is needed is at least one imidazole ring. If the sequence is long, it simply means that one or a few imidazole rings can be used for bonding, while there can be many other, free, imidazole rings that are not utilized for the purpose of bonding.

So, the process of forming complex I will be the same for a sequence containing six histidine residues and for any other histidine-rich sequence. Those having ordinary skill in the art will know that all is needed to practice the invention for a sequence containing any number of histidine residues is to use the procedures illustrated in Examples for a sequence containing six histidine residues, with minor routine variations, such as stoichiometric adjustments.

It is, therefore, submitted that the specification does enable the claims directed to any histidine-rich sequences, not just a sequence having six histidine residues. Accordingly, it is respectfully submitted that the rejection of claims 13, 16, 18-23, 25, and 26 under 35 U.S.C. § 112, first paragraph, as allegedly non-enabled, does not apply. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

D. Rejection under 35 U.S.C. §112, second paragraph - indefiniteness

1. Histidine-Rich Peptide Sequence

Claims 1-3, and 11-26 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. This rejection is respectfully traversed.

In particular, the Examiner has stated that with respect to claims 13, 16, 18-23, 25 and 26 it is not possible to ascertain the metes and bounds of the invention. The Examiner would approve the claims if they were limited to six peptides in the histidine sequence. The Examiner objects to the language which does not limit the sequence to six peptides. This objectionable to the Examiner language is "target sequence is a histidine-rich peptide sequence" (claims 13 and 16) and "histidine-rich protein" (claim 22). By reciting "the metes and bounds" clause, the Examiner clearly, then, rejects claims 13, 16, 18-2, 25 and 26 as too broad.

It is submitted that the rejection is improper. The breadth of a claim is not a defect, and the claim should be allowed as long as it is novel and non-obvious over prior art. It is axiomatic that a claim is not defective just because it is broad. See, *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971). MPEP states that when "the scope of the subject matter embraced by the claims is clear... then the claims comply with 35 U.S.C. 112, second paragraph" so long as there are no indications that the inventors "intend the invention to be of a scope different from that defined in the claims." See, MPEP § 2173.04 ("Breadth Is Not Indefiniteness").

Based on these authorities, the Applicants respectfully submit that claims 13, 16, 18-2, 25 and 26 are definite. The scope of claims 13, 16, 18-2, 25 and 26 is such that the Applicants claim **any** histidine-rich sequences. As pointed out above, the specification adequately describes any histidine-rich sequences, not just a sequence having six histidine residues. As also discussed above, the claims directed to any histidine-rich sequences are enabled, and the specification does provide good guidance, sufficient to those having ordinary skill in the art, on how to make the adducts containing products claimed in claim 1, chelating substances, and **any** histidine-rich sequences. There is no indication that the Applicants intend

that the invention to be of a scope that is different from that defined in claims 13, 16, 18-2, 25 and 26. It is, therefore, respectfully submitted that the rejection of claims 13, 16, 18-2, 25 and 26 on these grounds cannot be properly applied.

2. "About"

The Examiner has rejected claims 1-3 and 11-26 as allegedly indefinite for the recitation of the term "about." Applicant have amended the claims by deleting the term "about" at every occurrence. Therefore, Applicants respectfully request withdrawal of the present rejection.

3. Dependency

The Examiner has rejected claims 11-15, 17-19, 21, and 23-26 as allegedly reciting improper dependencies from claims 16, 20, and 22, respectively. The Examiner asserts that the dependent claims fail to further limit the scope of the independent claims.

With respect to the allegedly improper dependency of claims 11-15, and further with respect to the Examiner's assertion that claims 11-15 are substantially duplicative of claim 1, claim 15 has been canceled without prejudice, and claims 11-14 have been amended. Claims 11-14, as amended, now recite an

> "adduct, comprising a product of bonding of the compound of claim 1 to a target sequence in the presence of a chelating substance including Zn^{2+} ion."

Thus, claim 1 is directed to a compound, while each of claims 11-14 is directed to an adduct that includes the compound of claim 1. It is, therefore, submitted that claims 11-14, as amended, have the scope that is different from that of claim 1. As a result, claims 11-14 are not duplicative of claim 1, and are clear and definite.

With respect to the allegedly improper dependency of claims 17-19, and further with respect to the Examiner's assertion that claims 17-19 are substantially duplicative of claim 16, claim 18 has been canceled without prejudice, and claims 16, 17, and 19 have been amended. Claim 16, as amended, now recites a

> "kit, comprising: (a) a compound of claim 1; (b) a chelating substance including Zn^{2+} ion; and (c) a target sequence,

> wherein ... the compound of claim 1 is capable of binding to the target sequence ... to generate a detectable signal, the target sequence comprising a histidine-rich peptide sequence."

Claim 17 is directed to a kit in which "the target sequence comprises 6 histidine residues." Claim 19 is directed to a kit in which "the detectable signal is a fluorescent signal." Accordingly, the scope of each of claims 17 and 19 is narrower than the scope of claim 16. As a result, neither claim 17 nor claim 19 is duplicative of claim 16. Both claims 17 and 19 are clear and definite.

With respect to the allegedly improper dependency of claim 21, and further with respect to the Examiner's assertion that claim 21 is substantially duplicative of claim 20, the Applicants respectfully disagree. While claim 20 recites "a histidine-rich peptide sequence," claim 21 is directed to a product in which "the histidine-rich peptide sequence comprises 6 histidine residues." Accordingly, the scope of claim 21 is narrower than the scope of claim 20. As a result, claim 21 is not duplicative of claim 20, and is clear and definite.

With respect to the allegedly improper dependency of claims 23-26, and further with respect to the Examiner's assertion that claims 23-26 are substantially duplicative of claim 22, the Applicants respectfully disagree. Claim 23 has been canceled without prejudice.

Regarding claim 24, while claim 22 recites "a histidine-rich protein," claim 24 is directed to a product in which "the histidine-rich peptide protein comprises 6 histidine residues." Accordingly, the scope of claim 24 is narrower than the scope of claim 22. As a result, claim 21 is not duplicative of claim 20, and is clear and definite.

Regarding claim 25, while claim 22 is directed to a "method of labeling a histidine-rich protein" using a compound the formula of which is recited in claim 22, the compound recited in claim 25 "is capable of generating a detectable signal." In view of the limitation added to claim 25, the scope of claim 25 is narrower than the scope of claim 22. As a result, claim 25 is not duplicative of claim 22, and is clear and definite.

Regarding claim 26, a further limitation is added. Claim 26 recites that "the signal is a fluorescent signal." In view of the extra limitation added to claim 26, the scope of

claim 26 is narrower than the scope of claim 25, and even less narrow than the scope of claim 22. As a result, claim 26 is not duplicative of claim 22, and is clear and definite.

In view of the foregoing, it is respectfully submitted that the rejection of claims under 35 U.S.C. § 112, second paragraph, does not apply. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

E. Provisional Double Patenting Rejection under 35 U.S.C. §101

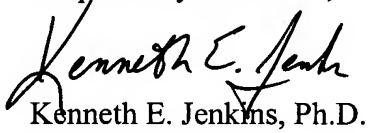
The Examiner has provisionally rejected claims 1-26 as allegedly claims the same invention as claims 1-26 of co-pending Application No. 10/346,658. Applicants note that the claims as amended are no longer coextensive in scope with claims 1-26 of co-pending Application No. 10/346,658. Therefore, Applicants respectfully request withdrawal of the rejection.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,



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